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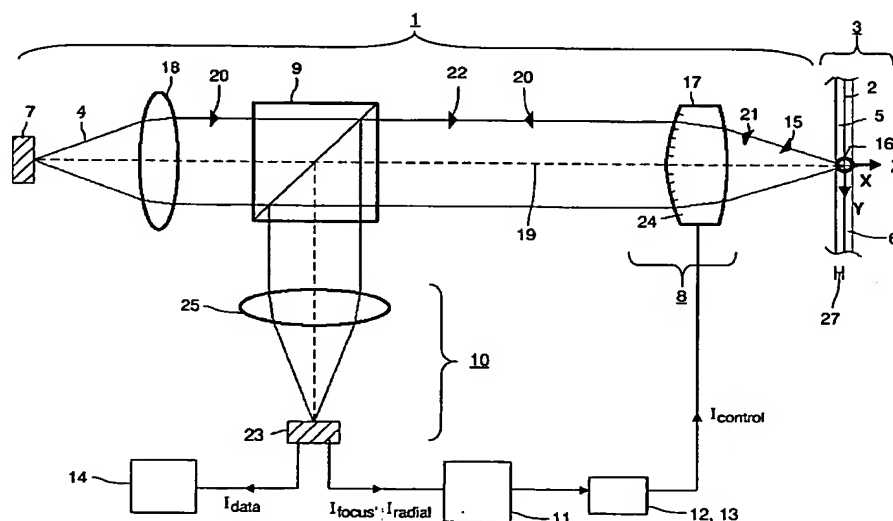
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- (71) Applicant (for all designated States except US): KONINKLIJKE PHILIPS ELECTRONICS N.V. [NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).
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(54) Title: OPTICAL SCANNING DEVICE



(57) Abstract: An optical scanning device (1) for scanning three information layer (2, 2', 2'') with three respective radiation beams (4, 4', 4'') having three respective wavelengths ( $\lambda_1, \lambda_2, \lambda_3$ ) and polarizations ( $p_1, p_2, p_3$ ). The three wavelengths differ from each other. At least one of the three polarizations differs from the others. The device comprises a diffractive part (24) including a pattern of pattern elements which have one stepped profile for forming three diffracted beams (15, 15', 15'') from the three radiation beams, the part comprising birefringent material, sensitive to the three polarizations. The stepped profile is designed such that the heights ( $h_j$ ) of the steps of a pattern element introduce phase changes that equal at least two different multiples of  $2\pi$  for one ( $\lambda_1$ ) of the three wavelengths and equal at least two different phase changes modulo  $2\pi$  for one ( $\lambda_2$ ) of the two other wavelengths.

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*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

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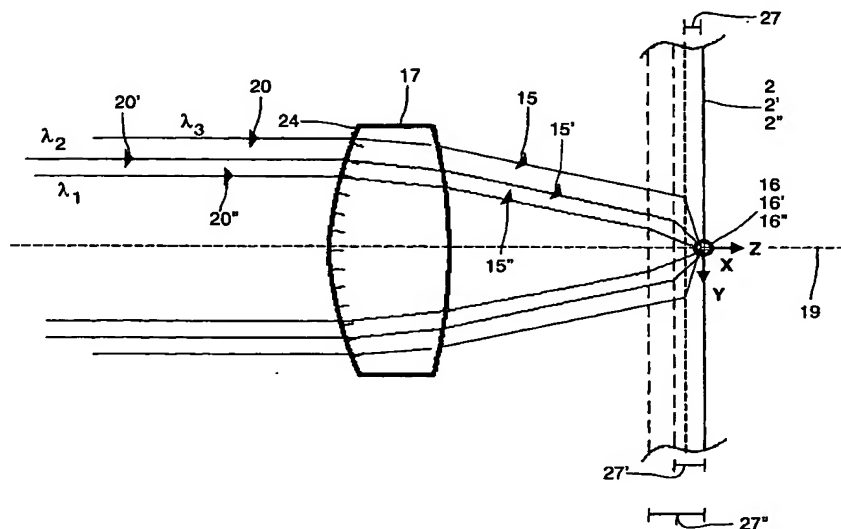
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- (74) Agent: **DEGUELLE, Wilhelmus, H., G.**; Philips Intellectual Property & Standards, Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).
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 A. CLASSIFICATION OF SUBJECT MATTER  
 IPC 7 G11B7/135 G02B5/08 G02B5/18

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

 Minimum documentation searched (classification system followed by classification symbols)  
 IPC 7 G11B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

PAJ, EPO-Internal

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	PATENT ABSTRACTS OF JAPAN vol. 2000, no. 25, 12 April 2001 (2001-04-12) & JP 2001 209966 A (PIONEER ELECTRONIC CORP), 3 August 2001 (2001-08-03) cited in the application abstract	1, 15
A	US 5 526 338 A (HASMAN EREZ ET AL) 11 June 1996 (1996-06-11) abstract	1, 15
P, A	WO 02 21522 A (KONINKL PHILIPS ELECTRONICS NV) 14 March 2002 (2002-03-14) the whole document	1, 15
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
E	<p>WO 03 060892 A (DE VRIES JORRIT E ;HENDRIKS BERNARDUS H W (NL); KONINKL PHILIPS EL) 24 July 2003 (2003-07-24) the whole document</p>	1, 15

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Information on patent family members

Inventor's Application No

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